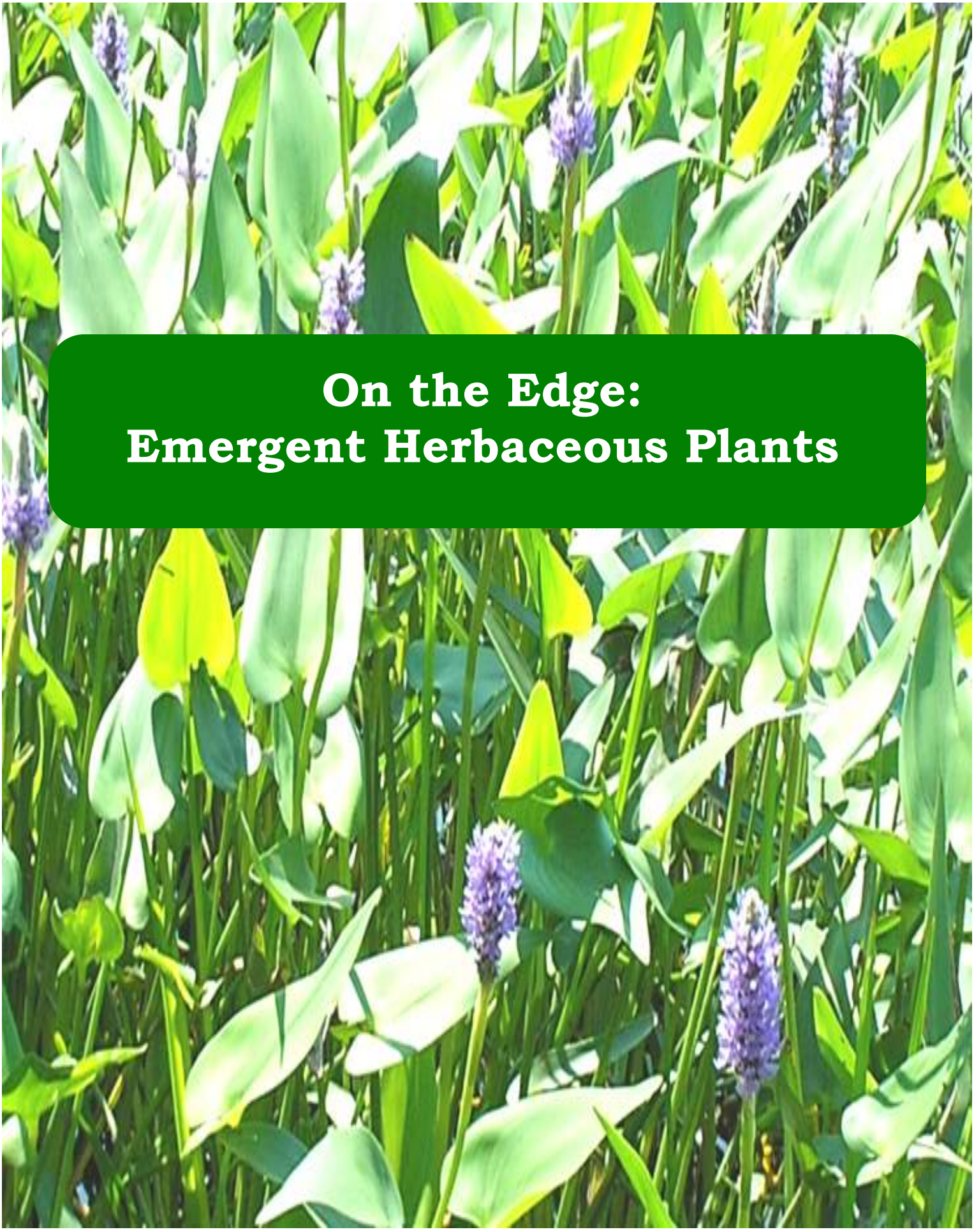

On the Edge:
Emergent Herbaceous Plants

ARROW ARUM
Peltandra virginica

- **Status:** Native
- **Habitat:** Edges of lakes, ponds, marshes, streams and rivers. In mud or shallow water.
- **Height:** Up to 2 feet tall, growing in loose colonies.
- **Stem:** Lacking a true stem. Leaf and flower stalks arising from a thick root.
- **Leaves:** Large, arrow-shaped. Lower lobes separating and tapering to the tips. Each lobe and the main stem have one prominent central vein from which other smaller veins originate. The smaller veins are parallel to one another. Leaf blade with a vein running along the entire outline just inside the margin.
- **Flower:** Vertically-curled, green. Very small, spathe almost completely covering the thin, whitish, fleshy spike. White male flowers above green female flowers, sheath tapering to the base and tip, green outside and white inside. Flowering cluster at the end of a long, naked stalk.
- **Flowering Period:** May to July.
- **Fruit:** Easily identified in the fall by its cluster of greenish-brown berries enclosed in a green leathery case, the stalk curved downward at maturity.
- **Similar Species:** Arrowhead (*Sagattaria latifolia*). Arrow Arum may be distinguished by its 3 prominent veins.

ARROWHEAD/DUCK-POTATO
Sagittaria spp.

- **Status:** Native. There are several species in New Hampshire; *S.latifolia and S.graminea* are the most common.
- **Habitat:** Edges of lakes, ponds, marshes, streams and rivers. In mud or completely submerged.
- **Height:** Up to 1 ½ feet tall.
- **Stem:** Lacking an upright visible stem. Leaves and flowering stalk arising from a fibrous rooted base. Several underground runners each giving rise to a tuber the size of a small potato up to 2 inches wide.
- **Leaves:** Shape is variable within and between species. Leaves can be broadly or narrowly arrow-shaped, lance-shaped, or tape-like. Leaves appear to clasp the base of the flowering stalk. Leaf veins all originate from the point where the stem connects to the leaf, and radiate outward from that point.
- **Flower:** White petals in whorls of three with a yellow center, up to 1 ½ inch wide. Male flowers at the top with female ones lower on the flower stalk.
- **Flowering Period:** July through September.
- **Fruit:** Flat, winged, crowded in a flattened head up to ½ inch wide. Ball-shaped fruit clusters of green nutlets.
- **Value:** Known as “duck potatoes”, Arrowhead produces edible starchy tubers beneath the mud, eaten by ducks and muskrats.

BLUE-FLAG IRIS
Iris versicolor

- **Status:** Native
- **Habitat:** Edges of lakes, ponds, marshes, streams and rivers. In less than 3 feet of water.
- **Height:** Up to 3 feet tall. Growing in small colonies.
- **Stem:** Upright, robust, flattened on one side, simple or with one or two branches, from creeping rhizomes embedded in the mud. Rhizome very shallow and sometimes exposed above the sediment.
- **Leaves:** Appearing basal but actually alternate, bluish-green, sword-like and up to 14 inches long and ¾ inch wide ascending in a flat plane or fan-like arrangement. Flower stalks are taller than the leaves.
- **Flower:** Large, purplish-blue, stalked, with 3 larger outer drooping petals, whitish toward the base, and 3 upright smaller petals in the center.
- **Flowering Period:** June through July.
- **Fruit:** Capsule up to 2 ½ inches long with 3 rounded edges, contains numerous flattened seeds often persisting into winter.
- **Value:** Provides food and cover for waterfowl and wildlife.
- **Similar Species:** Leaves may be confused with those of cattail (*Typha* spp.)or sweet flag *(Acorus calmus)*. Blue flag iris may be distinguished by blueish-green leaves arranged in flat plane.

Photo courtesy of Amy Smagula

BLUE VERVAIN
Verbena hastata

- **Status:** Native
- **Habitat:** Edges of ponds, marshes, streams and rivers.
- **Height:** Up to 4 feet tall growing in small colonies.
- **Stem:** Rough, four-sided, fairly straight, arising from a fibrous rooted base.
- **Leaves:** Up to 6 inches long, stalked, toothed, tapered at the tip, with a rough surface.
- **Flower:** 5 small blue petals in a pencil-like spike occurring singly or in clusters with individual flowers blooming periodically from the base to the top of spike.
- **Flowering Period:** July into October.
- **Fruit:** Separating into four nutlets.

BONESET /THOROUGHWORT
Eupatorium perfoliatum

- **Status:** Native
- **Habitat:** Wet meadows, marshes, edges of lakes, ponds, streams, and rivers.
- **Height:** Up to 5 feet tall. Branched, growing in small colonies.
- **Stem:** Upright, robust, lightly-downy, arising from a fibrous rooted base.
- **Leaves:** Opposite, lanceolate, tapering and pointed at the tip, toothed, with the base clasping the stem. Heavily veined. Up to 8 inches long and 2 inches wide at the base.
- **Flower:** Whitish in 3-4 terminal clusters up to 8 inches long.
- **Flowering Period:** Late July through October.

BUR-REED
Sparganium eurycarpum

- **Status:** Native
- **Habitat:** Edges of lakes, ponds, streams, and rivers. Emergent in shallow water up to 1 foot deep or submerged in water up to 4 feet deep.
- **Height:** Up to 3 feet tall.
- **Stem:** Upright, stout, smooth, arising from rhizomes embedded horizontally in the mud a few inches beneath the surface. Zigzag stalks.
- **Leaves:** Alternate, linear, up to 4 feet long. Emergent stem leaves narrow, up to 1 ½ feet tall, triangular in cross-section, and ridged on their back side. Certain species are erect while others are floating and ribbon-like.
- **Flower:** Lower bulbs or burs are clusters of greenish female flowers. Upper smaller burs are white male flowers.
- **Flowering Period:** June through August.
- **Fruit:** A burr-like head on a short or long stalk.
- **Value:** Colonies provide nesting sites for waterfowl and shorebirds. The fruit is eaten by a variety of waterfowl and the whole plant is grazed by muskrat and deer.
- **Similar Species:** This plant is easily confused with wild celery (*Vallisneria americana*) if the leaves are tape-like, or with young cattail *(Typha spp.)* if leaves are emergent. For the floating form, bur-reed has a ridge down the back of the long leaf. When erect and emergent, leaves are shorter in height than those of cattail, with a distinct ridge or almost triangular cross section. When in fruit, the spiky burr-like fruit is distinctive. (Smagula and Connor, 2007)

CARDINAL FLOWER
Lobelia cardinalis

- **Status:** Native
- **Habitat:** Shrub and forested wetlands, shaded edges streams and rivers.
- **Height:** Up to 5 feet tall, often growing in large colonies.
- **Stem:** Smooth, stout, arising from a horizontal rhizome embedded shallowly in mud.
- **Leaves:** Alternate, lanceolate to oblong, toothed, tapering at both ends. Lower leaves short-stalked, upper leaves stalkless. Up to 6 inches long and 1 ½ inches wide. Smooth to slightly downy, thin.
- **Flower:** Long, bright-red 2-lipped tubular flower occurring on terminal spike, with the upper lip 2-lobed and lower lip 3-lobed.
- **Flowering Period:** July into October.
- **Fruit:** Many-seeded capsule with two portions.
- **Value:** Cardinal flower is pollinated mostly by hummingbirds, since most insects find it difficult to navigate the long tubular flowers.

BROAD-LEAF CATTAIL
Typha latifolia

- **Status:** Native
- **Habitat:** Marshes, wet swales, edges of lakes and ponds, streams, and rivers.
- **Height:** Up to 10 feet tall.
- **Stem:** Upright, stiff, growing in dense stands from thick, extensively -creeping underground rhizomes.
- **Leaves:** Green or bluish-green, upright, linear, 2-6 feet long and up to 1 inch wide arising from base or alternating along the stem. Leaves have a spongy feel.
- **Flower:** Many small flowers packed into tight cigar-like clusters creating a lower female spike topped by a smaller male spike with no gap between the two flower types. Female spike persists turning into the familiar dark brown “tail.”
- **Flowering Period:** June into August.
- **Fruit:** Small, seed-like, surrounded by many bristles attached to the base.
- **Value:** Provides nesting habitat for many birds, such as the red-winged blackbird. Shoots and rhizomes are eaten by muskrats and geese. Submersed stalks provide spawning habitat and shelter for fish. One of only a few plants where all parts are edible to humans.
- **Similar Species:** Narrow-leaf cattail (*Typha angustifolia*) has narrower leaves, a narrower fruiting head, and a gap between the male and female flower clusters.

COMMON REED
Phragmites australis

- **Status: Most stands are Non-Native/Exotic, Invasive. This species is prohibited in New Hampshire.** *Phragmites australis* has been present in wetlands for millennia, but a non-native European species has crossbred with *P. australis* and has formed an invasive plant.
- **Habitat:** Fresh and brackish marshes, edges of lakes and ponds, streams, rivers, and in roadside ditches. Full to partial sun.
- **Height:** Upright, 4-14 feet tall, usually forming dense colonies.
- **Stem:** Called "culms", are large, hollow, and grow up to 1 inch wide.
- **Leaves:** Bluish-green, lanceolate, close together and usually sticking out from stems at a large angle, up to 2 feet long and 1 inch wide.
- **Flower:** Clusters ½ - 1 foot long, often purple when young and whitish and fluffy when old.
- **Flowering Period:** Late July to October.
- **Fruit:** Rarely produces seed but spreads vigorously by rhizomes, often running over the surface of the ground.
- **Value:** This plant has little to offer to birds and mammals besides cover. *Phragmites* often outcompetes other native wetland plants, thus limiting the plant diversity and food source value of the wetland. The only animal that feeds on this to any extent is the muskrat. (Smagula and Connor, 2007)
- **Similar Species:** Sometimes confused with reed canary grass since they both form dense stands at disturbed sites. Reed canary grass *(Phalaris arundinacea)* can be distinguished by its shorter and narrower leaves, spikelets with only one flower, and its shorter height.

How To Distinguish Native From Non-Native *Phragmites*

- **Stems:** Stems on the non-native variety are typically green, but may have a little purple color along the nodes. Stems on the native variety have some chestnut or purple color where leaves are pulled back, exposing the stem. Stems of the native variety are also often shiny and black spots often appear late in the growing season.
- **Leaf Collars:** Leaf collars on the non-native variety are always green, while leaf collars on the native variety may be purple.
- **Leaf Sheaths:** On fall stems, the leaf sheaths on the non-native variety remain attached. Leaf sheaths on the native variety are lost or very loosely attached so leaves drop off the native plants before the introduced plants. This is the best indicator based seasonal changes that distinguishes native or non-native varieties.

JEWELWEED/SPOTTED TOUCH-ME NOT
Impatiens capensis

- **Status:** Native
- **Habitat:** Shrub and forested wetlands, edges of lakes, ponds, streams, and rivers.
- **Height:** Up to 4 feet tall. Often growing in dense colonies.
- **Stem:** Upright, smooth, slightly branching, hollow, somewhat succulent, slightly translucent.
- **Leaves:** Alternate, egg-shaped, toothed on stalks up to 4 inches long. Silvery appearance when held under water and appear completely dry upon removal. Size and color of foliage vary with differences in light exposure and available moisture.
- **Flower:** Few to several dangling orange-yellow three-petaled tubular/funnel-shaped flowers with reddish brown spots and curved spur at their ends.
- **Flowering Period:** June through September.
- **Fruit:** Flat, green capsules approximately 1 inch long, which at maturity burst when touched, ejecting dark-brown seeds.
- **Value:** Especially adapted to hummingbird pollination, but bees and butterflies are also important pollinators.

The sap from this plant has been clinically proven to relieve skin rashes. Jewelweed can be applied to the affected part of the body and neutralizes the urishol oil produced by poison ivy and poison oak. (Smagula and Connor, 2007)

JOE PYE WEED
Eupatorium maculatum

- **Status:** Native
- **Habitat:** Marshes, wet meadows, edges of lakes, ponds, streams, and rivers.
- **Height:** Up to 6 feet tall. Branched, growing in small to medium-sized colonies.
- **Stem:** Stout, smooth, purple or purple-spotted, somewhat rough toward the top, arising from a fibrous rooted base.
- **Leaves:** Lanceolate, toothed, rough, short-stalked, with large single mid-vein. Up to 8 inches long and 2 ½ inches wide, tapered at the base and tip, in whorls of 3-7.
- **Flower:** Small, rose-purple, in dense, flat-topped clusters at the top of the stem and at the ends of the branches.
- **Flowering Period:** July through September.
- **Fruit:** Angular nutlet with a plume of fine bristles at the top.

PICKERELWEED
Pontedaria cordata

- **Status:** Native
- **Habitat:** Marshes, edges of lakes, ponds, streams, and rivers.
- **Height:** Up to 3 feet tall, often growing in dense colonies.
- **Stem:** Upright, stout, smooth, arising from a rhizome, bearing one leaf and one terminal spike.
- **Leaves:** Basal and alternate, very large, arrowhead to heart-shaped, glossy, with prominent parallel veins, blunt tip, on a spongy leaf stalk.
- **Flower:** Many small, tubular, violet-blue flowers approximately ½ inch long, on solitary spike with a sheath at the base.
- **Flowering Period:** June through August.
- **Fruit:** Small, bladder-like, with toothed ridges, containing one seed.
- **Value:** Seeds are consumed by waterfowl and muskrats. Networks of rhizomes and leaves also offer shade and shelter for fish.
- **Similar Species:** This plant can be distinguished from its close look-alikes, arrow arum and arrowhead by its light bluish-purple flower spike. Bases of the leaves are more rounded whereas arrowhead and arrow arum leaves are more pointed. (Smagula and Connor, 2007)

PURPLE LOOSESTRIFE
Lythrum salicaria

- **Status: Non-Native/Exotic, Invasive. This species is prohibited in New Hampshire.**
- **Habitat:** Marshes, edges of lakes, ponds, streams, rivers, and in roadside ditches. Full to partial sun.
- **Height:** 2-6 feet tall.
- **Stem:** Upright, smooth to slightly-downy. Square, four-sided, almost woody.
- **Leaves:** Opposite to whorled, lanceolate, often with heart-shaped bases somewhat clasping stem sometimes in whorls of 3. Gradually tapering to a point, 3 to 4 inches long and ½ to 1 inch wide.
- **Flower:** 5-7 purple petals in a dense terminal spike.
- **Flowering Period:** July through September.
- **Fruit:** Many-seeded capsule.
- **Value:** Little wildlife value. Seeds are low in nutrition, and roots are too woody. The flowers are attractive to insects. They produce nectar and are regularly visited by honeybees.

  This plant outcompetes other wetland plants, which are beneficial food sources for wildlife and insects. It reproduces by producing millions of seeds per plant and quickly takes over the landscape when introduced. It also spreads by rhizome. (Smagula and Connor, 2007)

REED CANARY GRASS
Phalaris arundinacea

- **Status: Non-Native/Exotic, Invasive.**
- **Habitat:** Swales, marshes, edges of lakes, ponds, streams, and rivers. Although it is usually a shoreline plant, it can survive in knee-deep water by sprouting "water roots" on the submersed portion of the stem. Forms dense stands in disturbed areas where clearing, grading, siltation, filling, or other disruptions have created an opening with moist soil.
- **Height:** Up to 7 feet tall. Often growing in dense colonies.
- **Stem:** Upright, stiff, from extensively-creeping rhizomes.
- **Leaves:** Alternate, upright, grayish-green, open sheath and ligule at the leaf axis. Blades fairly long and narrow, up to 12 inches long and ¾ inches wide.
- **Flower:** Green to greenish-purple spikelets, single-flowered, lanceolate, dense. Terminal inflorescence up to 7 inches long, branched and compressed early in the season but opening after fertilization.
- **Flowering Period:** June through August.
- **Value:** Low food value. Provides summer cover and habitat for waterfowl at disturbed sites. However, it tends to mat down in winter providing little winter cover for wildlife.
- **Similar Species:** Sometimes confused with bluejoint grass (*Calamagrostis canadensis*). However, the spikelets of bluejoint are in a loose, open arrangement and the nodes have a bluish to purplish cast.

SOFT-STEMMED BULRUSH
Scirpus validus

- **Status:** Native
- **Habitat:** Wetlands, edges of lakes, ponds, streams, and rivers. Usually growing in water less than 5 feet deep. Tends to be found on “muckier” substrate and will grow in stagnant water.
- **Height:** Usually up to 5 feet, but can grow up to 10 feet tall. Often growing in extensive colonies.
- **Stem:** Upright, grayish-green, often arching, up to ¾ inch thick at the base, arising from stout, reddish rhizomes. Soft, round, tapering to a point.
- **Leaves:** No apparent leaves.
- **Flowers:** Inconspicuous, many-stalked budlike spikelets covered by reddish-brown scales located immediately below the top of stem. Clusters mostly drooping, but not in higher salinity areas.
- **Flowering Period:** June into September.
- **Fruit:** Seed-like nutlet with 4-6 bristles attached to the base.
- **Value:** Provides habitat for invertebrates and shelter for young fish. Nutlets consumed by a variety of waterfowl, marsh birds, and upland birds. Stems and rhizomes eaten by geese and muskrat. Also provides nesting material and cover for waterfowl, marsh birds, and muskrat.

SWAMP LOOSESTRIFE/WATER WILLOW
Decodon verticillatus

- **Status:** Native shrub becoming herbaceous toward the tips.
- **Habitat:** Wetlands, bogs, edges of lakes, ponds, streams, and rivers. Shallow water with muck or peat sediment. Can form floating mats in areas of very soft sediment.
- **Height:** Up to 5 feet tall.
- **Stem:** Ridgid, woody, smooth to slightly-downy, 3-9 feet long. The lower rooting stems are spongy and buttressed giving rise to new arching stems.
- **Leaves:** Opposite or in whorls of 3, gradually tapering to a point, 3-4 inches long and ½ to 1 inch wide, sessile or short-stalked.
- **Flower:** Pinkish-purple, bell-shaped, with 5-7 sepals and 5 petals, forming showy clusters in the axils of the middle to upper leaves.
- **Flowering Period:** July through August.
- **Fruit:** Small, brownish capsule with 3-5 partitions; the clusters sometimes persisting above the leaf scars throughout winter.
- **Value:** The many intertwining arching stems may form sizable clusters at the edges of lakes and sluggish streams or floating bog mats. Wherever a stem touches the water, air-filled, spongy tissue may develop. This tissue buoys the stem so that it may root and form a new arching stem.
- **Similar Species:** May be confused with the invasive purple loosestrife *(Lythrum salicaria).* Swamp loosestrife can be distinguished by the arching stems and showy axillary flower clusters as well as the round stem, instead of the square stem of purple loosestrife. (Smagula and Connor, 2007)

THREE-WAY SEDGE
Dulichium arundinaceum

- **Status:** Native
- **Habitat:** Marshes, wet meadows, edges of lakes, ponds, streams, and rivers. Extensive beds can be found in shallow (less than 3 feet) water. Grows in a variety of sediment types and can tolerate some turbidity.
- **Height:** Up to 3 feet tall, solitary or in small colonies.
- **Stem:** Round, hollow, jointed, arising from a horizontal rhizome.
- **Leaves:** Linear, up to 4 inches long and 3/8 inch wide with a conspicuous sheath, the latter closed except at the top.

  When looking down upon the plant, the leaves are lined up and appear to radiate from three angles away from the main stem. (Smagula and Connor, 2007)
- **Flower:** Inconspicuous, flattened, linear, sessile spikelets in the axils or two-ranked scales of the brownish spikelets, 8-10 along the axillary stalk.
- **Flowering Period:** July through October.
- **Fruit:** Flattened, brownish, seed-like nutlet topped with a beak.
- **Value:** Eaten occasionally by a variety of ducks and geese. Rhizomes and shoots also grazed by muskrats.

WOOL GRASS
Scirpus cyperinus

- **Status:** Native
- **Habitat:** Marshes, wet meadows, edges of lakes, ponds, streams, and rivers.
- **Height:** Up to 5 feet tall, growing in small colonies.
- **Stem:** Upright, robust, round to triangular, especially at the base.
- **Leaves:** Elongate, from base of stem, up to 2 feet long. Leaves immediately below the flower are in clusters of 3-5 and may reach 5 inches long and droop at the tips.
- **Flower:** Clusters of 6-12 spikelets at ends of drooping stems. Flower clusters up to 12 inches long, much branched.
- **Flowering Period:** August through September.
- **Fruit:** Whitish, seed-like nutlet with bristles much longer than the scales attached to the base, the bristles impart the wooly appearance to the spikelets.
- **Value:** Provides food and cover for waterfowl and other wildlife.